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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,907	11/19/2003	Laura Pozzi		7049
7590 LAURA POZZI via MARAINI 1 LUGANO, 6900 SWITZERLAND			EXAMINER WOOD, WILLIAM H	
			ART UNIT 2193	PAPER NUMBER
			MAIL DATE 05/22/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/716,907

**Applicant(s)**

POZZI ET AL.

**Examiner**

William H. Wood

**Art Unit**

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 1-14 are pending and have been examined.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by **Pozzi et al.**, “Automatic Topology-Based Identification of Instruction-Set Extensions for Embedded Processors”.

#### *Claim 1*

**Pozzi** discloses a computerized method for determining a complex computer operation for a computer application, comprising the steps of:

generating a data flow graph representing the computer application (*page 2, section 2, first paragraph*);

generating a plurality of sub-graphs of said data flow graph, wherein each of said sub-graphs represents a basic block of said computer application (*page 2, section 2, first paragraph*);

generating a tree of potential complex computer operations, wherein each of said potential complex computer operations represents one or more of said sub-graphs (page 5, right column, first full paragraph; page 6, figure 2); and pruning the tree for optimality under constraints (page 5, right column, last paragraph to page 6).

Claim 2

**Pozzi** discloses the method of claim 1, wherein optimality comprises maximization of a function of merit (page 1, section 1).

Claim 3

**Pozzi** discloses the method of claim 1, wherein the constraints comprise a convexity constraint (page 6, figure 2).

Claim 4

**Pozzi** discloses the method of claim 1, wherein the constraints comprise a maximum-input- multiplicity constraint (page 2, section 2).

Claim 5

**Pozzi** discloses the method of claim 1, wherein the constraints comprise a maximum-output- multiplicity constraint (page 5, right column, last paragraph to page 6).

Claim 6

**Pozzi** discloses the method of claim 1, wherein pruning is effected when a connectivity constraint is violated (*page 5, right column, last paragraph to page 6*).

Claim 7

**Pozzi** discloses the method of claim 1, wherein pruning is effected when a connectivity constraint is violated and gain towards optimality of the maximal connected graph is bounded (*page 5, right column, last paragraph to page 6; figure 2, bounded elements*).

Claims 8-14

The limitations of claims 8-14 correspond to the limitations of claims 1-7 and are therefore rejected in a corresponding manner.

***Response to Arguments***

Applicant's arguments filed 04 February 2008 have been fully considered but they are not persuasive. Applicant argues the cited reference, **Pozzi**, fails to disclose a tree consisting of complex computer operations. However, it is noted that the data flow graph is itself a tree representing complex operations. More importantly, as the expanded rejections indicate, **Pozzi** disclosed other

trees of potential complex operations where the operations are one or more of said sub-graphs (page 6, figure 2), which may be pruned (page 5, right column, last paragraph to page 6). Therefore, the rejections are maintained as indicated.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (571)-272-3736. The examiner can normally be reached 10:00am - 4:00pm Tuesday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis A. Bullock Jr. can be reached on (571)-272-3759. The fax phone numbers for the organization where this application or proceeding is assigned are (571)273-8300 for regular communications.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR systems, see <http://pair-direct.uspto.gov>. For questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

/William H. Wood/

William H. Wood

Primary Examiner, Art Unit 2193

May 22, 2008